

RAYAGADA AUTONOMOUS COLLEGE, RAYAGADA

4TH SEMESTER 1ST INTERNAL ASSESMENT 2019

CHEMISTRY CORE-VIII (inorganic-III)

Full mark: 15

Time: 60 Min

Answer the following:

1. (a) Mention the assumptions considered in crystal field theory (CFT). Explain CFT by taking example of an octahedral complex. (10 marks)
(b) Explain the concept of Werner's theory for co-ordination compounds. (5 marks)
or
2. (a) Write a brief note on oxidation states of metal ions and their stability. ✓ (10 marks)
(b) Show a method that states the stability of scandium (+ 3) in acidic medium. ✓ (5 marks)
or
3. (a) Write note on variation of ionisation energy, electron affinity and electronegativity of 3d series. (05 marks)
(b) Discuss the geometrical isomerism shown by coordination complexes of C.N 4, 5, 6. (10 marks)

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CHEMISTRY CORE-IX (Organic –III)

Full mark: 15

Time: 60 Min

Answer the following:

1. (a) Discuss different methods of reduction of nitrobenzene. (10 marks)
- (b) Write notes on coupling reaction ^{of} benzene diazonium chloride. (5 marks)

or

2. (a) Distinguish between primary, secondary and tertiary amine. (10 marks)
- (b) Convert acetamide to acetonitrile and benzamide to benzyl amine. (5 marks)

or

3. Prepare the following from benzene diazonium chloride (3 x 5 marks)
 - (d) Benzene
 - (e) Phenol
 - (f) Fluorobenzene

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CHEMISTRY CORE-X (Physical)

Full mark: 15

Time: 60 Min

Answer the following:

1. (a) What is electrochemical cell? Discuss reversible and irreversible cell with example. (10 marks)
- (b) Write short note on liquid junction potential. (5 marks)

or

2. (a) Find out EMF of the following cells at 25° C using Nernst equation. (10 marks)
- (iii) $\text{Mg(s)}/\text{Mg}^{2+} (0.001 \text{ M}) || \text{Cu}^{2+} (0.0001 \text{ M})/\text{Cu(s)}$ $E^\circ_{\text{Mg}^{2+}/\text{Mg}} = -2.37\text{V}$, $E^\circ_{\text{Cu}^{2+}/\text{Cu}} = 0.34 \text{ V}$
- (iv) $\text{Fe (s)}/\text{Fe}^{2+} (0.001 \text{ M}) || \text{H}^+ (1 \text{ M})/\text{H}_2 (1 \text{ atm}), \text{Pt}$ $E^\circ_{\text{Fe}^{2+}/\text{Fe}} = -0.44\text{V}$

- (b) Explain the functioning of quinhydrone electrode and mention its advantages. (5 marks)

or

3. (a) What is concentration cell? Discuss concentration cell with transference. (10 marks)
- (c) Write note on standard hydrogen electrode (SHE)? (5 marks)

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CHEMISTRY SEC-II (Pharmaceutical Chemistry)

Full mark: 10

Time: 60 Min

Answer any one of the following:

1. (a) Give an account on antibiotics? Write preparation and uses of Chloramphenicol. (10 marks)
- (b) Write note on fermentation with reference to industrial manufacture of ethyl alcohol. (10 marks)
- (c) What are sulpha drugs? Write any two preparation and uses of sulpha drug. (10 marks)

